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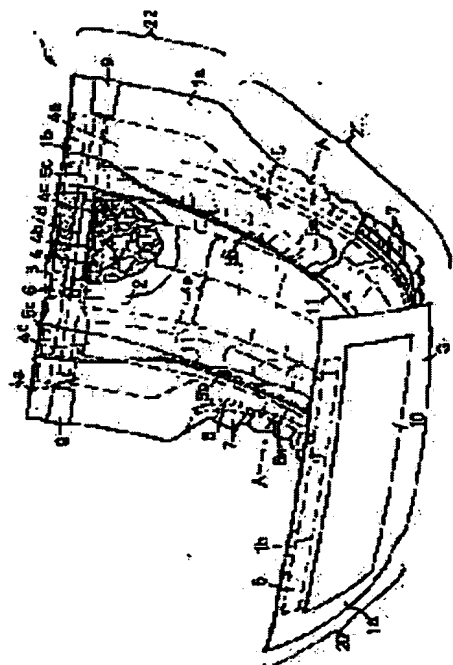
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## (54) HUMOR-ABSORBABLE WEARING ARTICLE

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide a humor-absorbable wearing article in which the excretion absorbed by raised portions of a core is smoothly moved to a location of the core located below the raised portions, and the excretion is never oozed from the raised portions.

SOLUTION: This article comprises a surface sheet 2, a back sheet 3 and the core interposed between the sheets 2 and 3, and has both edge portions 1a extending in the longitudinal direction and both edge portions 1b extending in the transverse direction, the raised portions 4c formed on the core 4 are extended along the edge portions 1a parallel to and separate from each other, and the density of the raised portion 4c is set to be smaller than that of a portion 4d of the core 4 except the raised portions 4c.



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CLAIMS

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[Claim(s)]

[Claim 1] The edges-on-both-sides section which consists of absorbent cores which intervene between a liquid permeability surface sheet, a non-liquid-permeable nature rear-face sheet, and these sheets, counters mutually, and is prolonged to a lengthwise direction, Have the ends edge which counters mutually and extends to a longitudinal direction, and the ridge which upheaves to said surface sheet side is formed in said core. Said article with which said ridge is characterized by being a low consistency in the body fluid absorptivity wear article of said edges-on-both-sides sections and said ends edges which carried out concurrency alienation mutually along with said edges-on-both-sides section at least, and has been prolonged rather than that of the part of said core excluding [ the consistency of said ridge ] said ridge.

[Claim 2] The article according to claim 1 whose consistency of said grinding pulp [ in / said core is formed from grinding pulp and a macromolecule absorptivity polymer, and / said ridge ] is a low consistency from it of the part of said core except said ridge.

[Claim 3] The article according to claim 2 whose consistency of said grinding pulp [ in / including the staple fiber in which said core was formed with thermoplastic synthetic resin / said ridge ], and said staple fiber is a low consistency from it of the part of said core except said ridge.

[Claim 4] claim 1 which has the consistency of said ridge in the range of 0.02 - 0.10 g/cm<sup>3</sup>, and has the consistency of the part of said core except said ridge in the range of 0.05 - 0.20 g/cm<sup>3</sup> thru/or claim 3 -- an article given in either.

[Claim 5] claim 1 in which said ridge is formed with the 2nd absorbent core of another object with said core thru/or claim 4 -- an article given in either.

[Claim 6] The fixed side section which it had the liquid resistance watertight sheet of a couple with which said article is located in the top face of a surface sheet, and is prolonged to said lengthwise direction, and said each of watertight sheet was located in the crowning of said ridge, and fixed on said articles, claim 1 which has the free flank which has elastic elasticity to said lengthwise direction, and has a standing-up disposition upwards from the outside surface of said surface sheet, and the fixed-end section which was located in the ends edge of said article and fixed on said articles thru/or claim 5 -- an article given in either.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the body fluid absorptivity wear article which absorbs excrement, such as a disposable diaper, a urine absorption pad for incontinencia persons, a diaper liner, a panties liner, and a sanitary napkin, and is held.

[0002]

[Description of the Prior Art] An absorbent core intervenes between a liquid permeability surface sheet and a non-liquid-permeable nature rear-face sheet, and it upheaves to the upper part of a core on the surface sheet [ in / at least / a length-from-the-crotch-to-the-cuff region ] of the fields of a core, and the absorptivity auxiliary member of two articles which carries out concurrency alienation to the lengthwise direction of an order bodice, and is prolonged to it is arranged, and JP,6-21626,U is indicating the disposable diaper which has made the compression recovery rate of an auxiliary member higher than that of a core. Even if a diaper deforms an auxiliary member with a wearer's body pressure, it restores easily, and since it has the high auxiliary member of compressibility, it can absorb or dam up excrement and can prevent the horizontal leakage of excrement, while an auxiliary member sticks to a wearer's skin.

[0003]

[Problem(s) to be Solved by the Invention] In the case where a lot of urine is excreted, an urination rate is quick, and the urine which piled up in the top face of a core returns, and it becomes the cause of leakage from the urine rate of absorption of a core. In the diaper of disclosure in this number official report, since there is no means to diffuse urine quickly throughout the front face of the core located between auxiliary members, if neither a core nor an auxiliary member can absorb a lot of excreted urine, urine piles up in the core located in an urination part, overcomes an auxiliary member, and may begin to leak. Moreover, in the case where the urine absorbed by the auxiliary member does not shift to a core smoothly from an auxiliary member, when an auxiliary member is crushed by a wearer's body pressure, the urine which piles up in an auxiliary member may ooze out from an auxiliary member.

[0004] In the absorbent core in which the ridge which dams up fluid excrement, such as a loose passage, and urine, menstrual blood, was formed, the technical problem of this invention is to offer the body fluid absorptivity wear article which can protect the leakage of excrement from the whole region of this part by making excrement absorb while diffusing excrement quickly throughout the front face of the part of the core located inside a ridge.

[0005] The excrement absorbed by the ridge shifts to a part smoothly from a ridge, and other technical problems of this invention are to offer the body fluid absorptivity wear article with which excrement does not exude from a ridge.

[0006]

[Means for Solving the Problem] This invention for solving the technical problem mentioned above A liquid permeability surface sheet and a non-liquid-permeable nature rear-face sheet, The edges-on-both-sides section which consists of absorbent cores which intervene among these sheets, counters mutually, and is prolonged to a lengthwise direction, Have the ends edge which counters mutually and extends to a longitudinal direction, and the ridge which upheaves to said surface sheet side is formed in said core. Said ridge is to improve the body fluid absorptivity wear article of said edges-

on-both-sides sections and said ends edges which carried out concurrency alienation mutually along with said edges-on-both-sides section at least, and has been prolonged.

[0007] The consistency of said ridge has the description of this invention concerning amelioration in it being a low consistency rather than that of the part of said absorptivity member except said ridge.

[0008] As an example of the mode of operation of this invention, said absorptivity member is formed from grinding pulp and a macromolecule absorptivity polymer, and the consistency of said grinding pulp in said ridge is a low consistency from it of the part of said absorptivity member except said ridge.

[0009] the voice of operation of this invention -- as other examples [ like ], the consistency of said grinding pulp [ in / including the staple fiber in which said absorptivity member was formed with thermoplastic synthetic resin / said ridge ], and said staple fiber is a low consistency from it of the part of said absorptivity member except said ridge.

[0010] the voice of operation of this invention -- as other examples [ like ], the consistency of said ridge is in the range of 0.02 - 0.10 g/cm<sup>3</sup>, and the consistency of the part of said absorptivity member except said ridge is in the range of 0.05 - 0.20 g/cm<sup>3</sup>.

[0011] As other examples of the mode of operation of this invention, said ridge is formed by the 2nd absorptivity member of another object with said absorptivity member.

[0012] It has the liquid resistance watertight sheet of a couple with which said article is located in the top face of a surface sheet, and is prolonged to said lengthwise direction as other examples [ like ]. the voice of operation of this invention -- The fixed side section which said each of watertight sheet was located in the crowning of said ridge, and fixed on said articles, It has the free flank which has elastic elasticity to said lengthwise direction, and has a standing-up disposition upwards from the outside surface of said surface sheet, and the fixed-end section which was located in the ends edge of said article and fixed on said articles.

[0013]

[Embodiment of the Invention] It is as follows when a disposable diaper and the urine absorption pad for incontinencia persons are explained for the detail of the body fluid absorptivity wear article concerning this invention as an example with reference to an attached drawing.

[0014] Drawing 1 and 2 are with the partial fracture perspective view of the disposable diaper 1, and the A-A line sectional view of drawing 1, and an imaginary line Y shows a 4d [ of parts of the core 4 except ridge 4c and ridge 4c of a core 4 ] boundary at drawing 2. The diaper 1 consists of absorbent cores 4 which intervene between the liquid permeability surface sheet 2, the non-liquid-permeable nature rear-face sheet 3, and the surface sheet 2 and the rear-face sheet 3.

[0015] A diaper 1 is a thing of a sandglass mold which has edges-on-both-sides section 1a which has the circumference region 20 of a forward fuselage assembly, the circumference region 22 of a back drum, and the length-from-the-crotch-to-the-cuff region 21 located among the circumference regions 20 and 22 of an order drum in a lengthwise direction, counters it mutually, is prolonged to a lengthwise direction, and draws an arc toward the method of the inside of a longitudinal direction of a diaper 1 in the length-from-the-crotch-to-the-cuff region 21, and ends edge 1b which counters mutually and is prolonged to a longitudinal direction. The liquid resistance watertight sheet 5 of the couple which carries out opposite alienation mutually and is prolonged to a lengthwise direction in a diaper 1 is attached in the surface sheet 2 side in edges-on-both-sides section 1a of a diaper 1.

[0016] It is the mixture of grinding pulp and a macromolecule absorptivity polymer, and a core 4 is compressed into necessary thickness, and the whole front face is covered with the permeable sheet 6, and it is joined. It upheaves to a core 4 from the top face of a core 4 bordering on the imaginary line Y shown in drawing 2, and ridge 4c by which the corner was beveled is formed in it. Ridge 4c was located in edges-on-both-sides section 4a of a core 4, carried out concurrency alienation mutually, and is prolonged in the shape of abbreviation direct to the lengthwise direction. A core 4 is the thing of a low consistency from it of 4d of parts of the core 4 excluding [ the consistency of the grinding pulp in ridge 4c ] ridge 4c. Ridge 4c and 4d of parts contain the polymer of the amount of abbreviation homogeneity.

[0017] A core 4 has the consistency of grinding pulp [ in / in the consistency of the grinding pulp in ridge 4c / the range of 0.02 - 0.10 g/cm<sup>3</sup>, and 4d of parts ] in the range of 0.05 - 0.20 g/cm<sup>3</sup>, and the consistency of grinding pulp [ in / in the consistency of the grinding pulp in ridge 4c / the range of

0.05 - 0.06 g/cm<sup>3</sup> and 4d of parts ] is the range of 0.10 - 0.11 g/cm<sup>3</sup> preferably.

[0018] At 4d of parts of the core 4 in the above-mentioned range, the consistency of grinding pulp becomes dense [ the fiber gap of grinding pulp ], and capillarity appears strongly. Therefore, by 4d of parts, the diffusion rate of excrement [ in / in the thickness direction / the front face of a core 4 ] is quick, and the rate of absorption of excrement is quick.

[0019] By 4d of parts of a core 4, the excrement diffused in the whole region of field 4e of 4d of these parts is promptly absorbable, diffusing quickly the excrement which penetrated the surface sheet 2 and the permeable sheet 6, and arrived at 4d of parts throughout the front face of field 4e of 4d of parts located between ridge 4c.

[0020] In the process which excrement diffuses in field of 4d of parts 4e, since sequential absorption of the excrement which reached ridge 4c is carried out at ridge 4c, excrement does not leak from edges-on-both-sides section 1a of a diaper 1. In ridge 4c with the consistency of grinding pulp lower than that of 4d of parts, since the excrement absorbed by ridge 4c is absorbed from ridge 4c by 4d of parts, even if ridge 4c is crushed with a wearer's body pressure, excrement does not exude from ridge 4c.

[0021] In ridge 4c of the core 4 which has the consistency of grinding pulp in the above-mentioned range, since flexibility becomes high as compared with 4d of parts, a corner is beveled and it is not square, a feel when ridge 4c touches a wearer's skin is good.

[0022] Since the fiber gap of grinding pulp will contract and the height dimension of ridge 4c will become low with the surface tension of the liquid contained in excrement when excrement is absorbed by ridge 4c if the consistencies of the grinding pulp in ridge 4c are less than three 0.02 g/cm, excrement overcomes ridge 4c and may begin to leak. If the consistency of the grinding pulp in ridge 4c exceeds 0.10 g/cm<sup>3</sup>, since the excrement absorbed by ridge 4c by a ridge 4c and 4d [ of parts ] consistency difference becoming small will not shift to 4d of parts smoothly from ridge 4c, when ridge 4c is crushed with a wearer's body pressure, the excrement which piles up in ridge 4c may exude from ridge 4c.

[0023] It is it hard coming to spread excrement in field of 4d of parts 4e that the consistencies of the grinding pulp in 4d of parts are less than three 0.05 g/cm, and excrement cannot be absorbed in the whole region of field 4e of 4d of these parts. If the consistency of the grinding pulp in 4d of parts exceeds 0.20 g/cm<sup>3</sup>, when the rigidity of the core 4 in 4d of parts increases and a core 4 touches a wearer's skin, sense of incongruity will be given.

[0024] A core 4 can contain the staple fiber formed with the thermoplastic synthetic resin other than grinding pulp and a macromolecule absorptivity polymer. The core 4 containing a staple fiber is the mixture of grinding pulp, a staple fiber, and a polymer, and in the condition of having been compressed into necessary thickness, the whole front face is covered with the permeable sheet 6, and it is joined. As for a core 4, it is desirable that it is a low consistency and the consistency by which the consistency which set the grinding pulp and the staple fiber in ridge 4c set the grinding pulp and the staple fiber in the range and 4d of parts of 0.02 - 0.10 g/cm<sup>3</sup> is in the range of 0.05 - 0.20 g/cm<sup>3</sup> rather than them of 4d of parts excluding [ the consistency of the grinding pulp and the staple fiber in ridge 4c ] ridge 4c.

[0025] At 4d of parts of the core 4 containing a staple fiber, the fiber gap of grinding pulp and a staple fiber becomes dense, and capillarity appears strongly. Therefore, by 4d of parts, the diffusion rate of excrement [ in / in the thickness direction / the front face of a core 4 ] is quick, and the rate of absorption of excrement is quick.

[0026] In ridge 4c with the consistency of grinding pulp and a staple fiber lower than that of 4d of parts, the excrement absorbed by ridge 4c is absorbed from ridge 4c by 4d of parts.

[0027] The elastic elasticity member 7 for the circumferences of a foot of two articles intervenes between the rear-face sheet 3 and a watertight sheet 5, and is attached in one [ at least ] inner surface of the rear-face sheet 3 and a watertight sheet 5 in the state of expanding at edges-on-both-sides section 1a of a diaper 1. The film-like elastic elasticity member 8 for the circumferences of a drum intervenes between the surface sheet 2 and the rear-face sheet 3, and is attached in one [ at least ] inner surface of the surface sheet 2 and the rear-face sheet 3 in the state of expanding at ends edge 1b of a diaper 1.

[0028] The tape fastener 9 prolonged to the method of the inside of a longitudinal direction is

attached in edges-on-both-sides section 1a in the circumference region 22 of a back drum of a diaper 1. The target tape 10 of the rectangle used as the firm attachment region of the tape fastener 9 is attached in the outside surface of the rear-face sheet 3 in the circumference region 20 of a forward fuselage assembly of a diaper 1.

[0029] Fixed side section 5a which the watertight sheet 5 fixed on the outside surface of the surface sheet 2 in the crowning of ridge 4c of a core 4, In free flank 5b prolonged between ends edge 1b of a diaper 1 in parallel to fixed side section 5a, and ends edge 1b of a diaper 1, it is bent to the method of the outside of a longitudinal direction, and has fixed-end section 5c which fixed into the part of the watertight sheet 5 prolonged from fixed side section 5a to the method of the outside of a longitudinal direction. The elastic elasticity member 11 prolonged to a lengthwise direction in free flank 5b is attached in the bottom of expanding after having been covered by free flank 5b.

[0030] Since fixed side section 5a of a watertight sheet 5 is located in the crowning of ridge 4c of a core 4, as compared with what does not have ridge 4c in a core 4, free flank 5b of a watertight sheet 5 can form a high obstruction also for what has a short width method between fixed side section 5a and free flank 5b conjointly with ridge 4c, and a diaper 1 can prevent the horizontal leakage of excrement.

[0031] In drawing 1, the diaper 1 \*\*\*\*\*ed the inner surface inside, and it curved to the lengthwise direction, and the elastic member 11 attached in free flank 5b of a watertight sheet 5 contracted, and free flank 5b has stood up upwards from the surface sheet 2. a diaper 1 -- elastic members 7, 8, and 11 -- each contracts and gathers are formed in edges-on-both-sides section 1a of a diaper 1 and ends edge 1b, and free flank 5b of a watertight sheet 5.

[0032] In edges-on-both-sides section 1a of a diaper 1, the table rear-face sheets 2 and 3 and a watertight sheet 5 were prolonged from edges-on-both-sides section 4a of a core 4 to the method of the outside of a longitudinal direction, the inner surface of the surface sheet 2 and the inner surface of the rear-face sheet 3 fixed in the part which these sheets 2, 3, and 5 overlap mutually, and the outside surface of the surface sheet 2 and the inner surface of a watertight sheet 5 have fixed. In the part further prolonged to the method of the outside of a longitudinal direction, the inner surfaces of these sheets 3 and 5 have fixed the rear-face sheet 3 and the watertight sheet 5 from the side edge of the surface sheet 2.

[0033] In ends edge 1b of a diaper 1, the surface sheet 2 and the rear-face sheet 3 were prolonged from ends edge 4b of a core 4 to the method of the outside of a lengthwise direction, and the inner surface of the surface sheet 2 and the inner surface of the rear-face sheet 3 have fixed by it in the part which these sheets 2 and 3 overlap mutually. The permeable sheet 6 has fixed to one [ at least ] inner surface of the surface sheet 2 and the rear-face sheet 3.

[0034] Drawing 3 - drawing 5 are the top views of the diaper 1 in which the various embodiments in drawing 1 are shown from the surface sheet 2 side. The diaper 1 of drawing 3 - drawing 5 consists of cores 4 which intervene between the surface sheet 2, the rear-face sheet 3, and these sheets 2 and 3. To a lengthwise direction The circumference regions 20 and 22 of an order drum, In the point that have the length-from-the-crotch-to-the-cuff region 21, edges-on-both-sides section 1a which draws an arc toward the method of the inside of a longitudinal direction of a diaper 1 in the length-from-the-crotch-to-the-cuff region 21, and ends edge 1b, and the watertight sheet 5 of a couple is attached in the surface sheet 2 side in edges-on-both-sides section 1a of a diaper 1, it is the same as that of it of drawing 1.

[0035] drawing 3 -- alienation -- ridge 4c of the core 4 prolonged in parallel draws an arc toward the method of the inside of a longitudinal direction of a diaper 1 in the length-from-the-crotch-to-the-cuff region 21, and spacing of ridge 4c is narrow and larger than the length-from-the-crotch-to-the-cuff region 21 in the circumference regions 20 and 22 of an order drum in the length-from-the-crotch-to-the-cuff region 21. When the diaper 1 of drawing 3 wears a diaper 1, ridge 4c can make small bulky [ the core 4 in \*\*\*\*\* and the length-from-the-crotch-to-the-cuff region 21 ] at a wearer's crotch.

[0036] drawing 4 -- alienation -- ridge 4c of the core 4 prolonged in parallel draws an arc toward the method of the outside of a longitudinal direction of a diaper 1 in the length-from-the-crotch-to-the-cuff region 21, and spacing of ridge 4c is large and narrower than the length-from-the-crotch-to-the-cuff region 21 in the circumference regions 20 and 22 of an order drum in the length-from-the-

crotch-to-the-cuff region 21. The diaper 1 of drawing 4 can diffuse excrement in field 4e between ridge 4c in the length-from-the-crotch-to-the-cuff region 21 quickly, can make it able to absorb spacing of ridge 4c in the length-from-the-crotch-to-the-cuff region 21 by making it large, and can prevent the leakage of the excrement from the length-from-the-crotch-to-the-cuff region 21.

[0037] In drawing 5, ridge 4c of a core 4 was located in the periphery section of a core 4, and is prolonged annularly. Since ridge 4c is prolonged annularly, ridge 4c becomes an obstruction other than edges-on-both-sides section 1a of a diaper 1 also in ends edge 1b, and, as for the diaper 1 of drawing 5, can prevent the leakage of the excrement from edges-on-both-sides section 1a of a diaper 1, and ends edge 1b.

[0038] Drawing 6 and 7 are with the partial fracture top view of the urine absorption pad 30 for incontinentia persons, and the B-B line sectional view of drawing 6. The pad 30 consists of absorbent cores 33 and 34 which intervene between the liquid permeability surface sheet 31, the non-liquid-permeable nature rear-face sheet 32, and the surface sheet 31 and the rear-face sheet 32. A pad 30 is used attaching in the inner surface of outer sheets, such as a diaper cover, incontinentia trousers, etc. for holding a pad 30.

[0039] A pad 30 has edges-on-both-sides section 30a which has the circumference region 40 of a forward fuselage assembly, the circumference region 42 of a back drum, and the length-from-the-crotch-to-the-cuff region 41 located among the circumference regions 40 and 42 of an order drum in a lengthwise direction, counters it mutually, and is prolonged to a lengthwise direction, and ends edge 30b which counters mutually and is prolonged to a longitudinal direction. The liquid resistance watertight sheet 35 of the couple which carries out opposite alienation mutually and is prolonged to a lengthwise direction is attached in edges-on-both-sides section 30a of a pad 30.

[0040] Cores 33 and 34 are formed in the lengthwise direction along with edges-on-both-sides section 34a of the lower layer core 34 and the lower layer core 34 from the upper core 33 prolonged in the shape of abbreviation direct. The corner was beveled and the upper core 33 is prolonged to near the ends edge 34b of the lower layer core 34. The upper core 33 forms the ridge to the lower layer core 34. the upper core 33 and the lower layer core 34 are the mixture of grinding pulp and a macromolecule absorptivity polymer, and it compresses into necessary thickness -- having -- cores 33 and 34 -- each whole front face is covered and joined with the permeable sheet 36.

[0041] The circumference region 40 of a forward fuselage assembly and the length-from-the-crotch-to-the-cuff region 41 have the area of abbreviation identitas, and the lower layer core 34 has an area larger than that of the circumference region 40 of a forward fuselage assembly, and the length-from-the-crotch-to-the-cuff region 41 in the circumference region 42 of a back drum. The consistency of grinding pulp [ in / in the vertical layer cores 33 and 34 / the upper core 33 ] is a low consistency from it of the lower layer core 34, and the upper core 33 and the lower layer core 34 contain the polymer of the amount of abbreviation homogeneity.

[0042] With a pad 30, the consistency of grinding pulp [ in / in the consistency of the grinding pulp in the upper core 33 / the range of 0.02 - 0.10 g/cm<sup>3</sup> and the lower layer core 34 ] is in the range of 0.05 - 0.20 g/cm<sup>3</sup>, and the consistency of grinding pulp [ in / in the consistency of the grinding pulp in the upper core 33 / the range of 0.05 - 0.06 g/cm<sup>3</sup> and the lower layer core 34 ] is the range of 0.10 - 0.11 g/cm<sup>3</sup> preferably.

[0043] With the lower layer core 34 which has the consistency of grinding pulp in the above-mentioned range Since the diffusion rate of excrement [ in / in the thickness direction / the front face of the lower layer core 34 ] is quick and the rate of absorption of excrement is quick The excrement diffused in the whole region of this field 34c is promptly absorbable, diffusing quickly the excrement which penetrated the surface sheet 31 and the permeable sheet 35, and reached the lower layer core 34 throughout the front face of field 34c of the lower layer core 34 located between the upper cores 33.

[0044] In the process which excrement diffuses in field 34c of the lower layer core 34, since sequential absorption of the excrement which reached the upper core 33 is carried out at the upper core 33, excrement does not leak from edges-on-both-sides section 30a of a pad 30. With the upper core 33 with the consistency of grinding pulp lower than that of the lower layer core 34, since the excrement absorbed by the upper core 33 is absorbed by the lower layer core 34 from the upper core 33, even if the upper core 33 is crushed with a wearer's body pressure, excrement does not exude



from the upper core 33.

[0045] A feel when flexibility is high as compared with the lower layer core 34 and the upper core 33 touches a wearer's skin with the upper core 33 which has the consistency of grinding pulp in the above-mentioned range is good. The reason for making the consistency of the upper core 33 and the lower layer core 34 into the above-mentioned value is the same as that of the diaper 1 shown in drawing 1.

[0046] With a pad 30, the vertical layer cores 33 and 34 may be the mixture of grinding pulp, the staple fiber formed with thermoplastic synthetic resin, and a macromolecule absorptivity polymer. As for the vertical layer cores 33 and 34 containing a staple fiber, it is desirable that the consistency by which the consistency of the grinding pulp and the staple fiber in the upper core 33 set grinding pulp and a staple fiber is in the range of 0.05 - 0.20 g/cm<sup>3</sup>. [ in / in the consistency which is a low consistency from them of the lower layer core 34, and set the grinding pulp and the staple fiber in the upper core 33 / the range of 0.02 - 0.10 g/cm<sup>3</sup> and the lower layer core 34 ]

[0047] A watertight sheet 35 is bent toward the method of the inside of a longitudinal direction by edges-on-both-sides section 30a of a pad 30, and has part II part 35e prolonged to the outside surface side of the rear-face sheet 32 from part I part 35a prolonged from the edges-on-both-sides section 30 of a pad 30 to the outside surface side of the surface sheet 31, and edges-on-both-sides section 30a of a pad 30.

[0048] Fixed side section 35b which part I part 35a of a watertight sheet 35 fixed on the outside surface of the surface sheet 31 in the crowning of the upper core 33, In free flank 35c prolonged between ends edge 30b of a pad 30 in parallel to fixed side section 35b, and ends edge 30b of a pad 30, it is bent to the method of the outside of a longitudinal direction, and has 35d of fixed-end sections which fixed into the part of the watertight sheet 35 prolonged from fixed side section 35b to the method of the outside of a longitudinal direction. The elastic elasticity member 37 prolonged to a lengthwise direction in free flank 35c is attached in the bottom of expanding after having been covered by free flank 35c. Part II part 35e has fixed on the outside surface of the rear-face sheet 32 in edges-on-both-sides section 30a of a pad 30, and ends edge 30b.

[0049] Since fixed side section 35b of a watertight sheet 35 is located in the crowning of the upper core 33, free flank 35b of a watertight sheet 35 can form a high obstruction conjointly with the upper core 33, and a pad 30 can prevent the horizontal leakage of excrement.

[0050] Two male mechanical fasteners 38 which can be hung from the inner surface of an outer member are attached in the outside surface of the rear-face sheet 32 in ends edge 30b of a pad 30.

[0051] In drawing 4, the pad 30 \*\*\*\*ed the inner surface inside, and it curved to the lengthwise direction, and the elastic member 37 attached in free flank 35b of a watertight sheet 35 contracted, and free flank 35b has stood up upwards from the outside surface of the surface sheet 31. With the pad 30, an elastic member 37 contracts and gathers are formed in free flank 35b of a watertight sheet 35.

[0052] In edges-on-both-sides section 30a of a pad 30, the surface sheet 31 and the rear-face sheet 32 were prolonged to the method of the outside of a longitudinal direction from edges-on-both-sides section 33a of the lower layer core 34, and the inner surfaces of these sheets 31 and 32 have fixed by it in the part which these sheets 31 and 32 overlap mutually.

[0053] In ends edge 30b of a pad 30, the surface sheet 31 and the rear-face sheet 32 were prolonged from ends edge 33b of the lower layer core 34 to the method of the outside of a lengthwise direction, and the inner surfaces of these sheets 31 and 32 have fixed by it in the part which these sheets 31 and 32 overlap mutually. The permeable sheet 36 which covers the upper core 33 fixed to the inner surface of the surface sheet 31, and the permeable sheet 36 which covers the lower layer core 34 has fixed it to the inner surface of the rear-face sheet 32.

[0054] With the core 4 of the diaper 1 shown in drawing 1, the polymer of the amount from which ridge 4c and part 4b differ, respectively may be contained, and the upper core 33 and the lower layer core 34 may contain the polymer of an amount different, respectively with the cores 33 and 34 of the pad 30 shown in drawing 6.

[0055] When it contains the polymer of a different amount, as for the core 4 of drawing 1, it is desirable that the consistency with which the consistency of ridge 4c doubled grinding pulp and a polymer is in the range of 0.05 - 0.20 g/cm<sup>3</sup>. [ in / in the consistency which is a low consistency

from it of 4d of parts, and doubled the grinding pulp and the polymer in ridge 4c / 0.02-0.10g //cm / the range of 3 and 4d of parts ] When a core 4 contains a staple fiber, it is desirable that 0.05-0.20g/cm of consistencies by which the consistency which set the grinding pulp and the polymer in ridge 4c, and the staple fiber set the grinding pulp and the polymer in 0.02-0.10g [/cm ] the range of 3 and 4d of parts, and the staple fiber is in the range of 3.

[0056] When it contains the polymer of a different amount, as for the cores 33 and 34 of drawing 6 , it is desirable that the consistency with which the consistency of the upper core 33 doubled grinding pulp and a polymer is in the range of 0.05 - 0.20 g/cm<sup>3</sup>. [ in / 0.02-0.10g/cm / in the consistency which is a low consistency from it of the lower layer core 34, and doubled the grinding pulp and the polymer in the upper core 33 / the range of 3 and the lower layer core 34 ] When the vertical layer cores 33 and 34 contain a staple fiber, it is desirable that the consistency by which the consistency which set the grinding pulp and the polymer in the upper core 33, and the staple fiber set grinding pulp and a polymer, and the staple fiber cm is in the range of 0.05 - 0.20 g/cm<sup>3</sup>. [ in / 0.02-0.10g // the range of 3 and the lower layer core 34 ]

[0057] Moreover, when it contains the polymer of the amount from which the cores 4, 33, and 34 of drawing 1 and drawing 6 differ, inclination can be prepared in the consistency of a polymer. It is desirable to make it the consistency of a polymer become high gradually with the core 4 of drawing 1 toward the lower part of 4d of the upper part of ridge 4c to parts, and it is desirable to make it the consistency of a polymer become high gradually with the cores 33 and 34 of drawing 6 toward the lower part of the upper part of the upper core 33 to the lower layer core 34. In addition, 4d of parts of a core 4 and the lower layer core 34 may be the layered products which made the polymer intervene between [ other than the mixture of grinding pulp and a polymer ] grinding pulp.

[0058] Although it is that with which ridge 4c and 4d of parts were united, and the process which makes a different consistency ridge 4c and 4d of parts is required for the core 4 of drawing 1 when manufacturing a core 4 Since the cores 33 and 34 of drawing 6 are formed from the upper core 33 and the lower layer core 34 of another object, they can manufacture the upper core 33 and the lower layer core 34 from which a consistency differs, respectively, without needing the above-mentioned process, and are advantageous in respect of a manufacturing cost as compared with the core 4 of drawing 1 .

[0059] It is desirable that it is in the range whose height dimension of ridge 4c and the upper core 33 is 3-15mm with the cores 4, 33, and 34 of drawing 1 and drawing 6 , and the range of it is 7-8mm more preferably. Moreover, it is desirable that it is in the range whose height dimension with 4d of parts and the lower layer core 34 is 1-10mm, and the range of it is 3-4mm more preferably.

[0060] The particle-like thing which has the property which absorption and maintenance are possible and gels the liquid of 20 times or more of a self-weight as a macromolecule absorptivity polymer is desirable, and can use the saponification object of a starch-acrylic-acid (salt) graft polymer and a starch-acrylonitrile copolymer, the bridge formation object of a sodium carboxymethyl cellulose, an acrylic-acid (salt) polymer, etc.

[0061] the sheet of liquid permeability [ sheets / 2 and 31 / surface ], such as a nonwoven fabric and a puncturing plastic film, -- it is liquid permeability preferably and the sheet of a hydrophilic property can be used. the rear-face sheets 3 and 32 and watertight sheets 5 and 35 -- the plastic film of a hydrophobic nonwoven fabric and non-liquid-permeable nature, or the lamination sheet of a hydrophobic nonwoven fabric and a plastic film -- the sheet of aeration non-liquid-permeable nature can be used preferably. Tissue paper and basis weight can use the liquid permeability nonwoven fabric in the range of 5 - 10 g/m<sup>2</sup> for the permeable sheets 6 and 36 which cover cores 4, 33, and 34.

[0062] As a nonwoven fabric, nonwoven fabrics, such as a span ball race, needle punch, melt-blown \*\*, thermal bond, a span pound, and chemical bond, can be used. As a staple fiber contained in the configuration fiber and the core of a nonwoven fabric, the bicomponent fiber of each fiber of polyolefine system, polyester system, and polyamide system \*\*, polyethylene/polypropylene, or polyester etc. can be used.

[0063] The technique of heat joining other than adhesives, such as hot melt adhesive, or a binder can be used for fixing of the configuration members 9, 10, and 38 of sheets 2, 3, 5, 6, 31, 32, 35, and 36, a diaper 1, and a pad 30, and installation of elastic members 7, 8, 11, and 37.

[0064] This invention can be carried out to a diaper liner, a panties liner, a sanitary napkin, etc. other

than the disposable diaper 1 or the urine absorption pad 30 for incontinentia persons.

[0065]

[Effect of the Invention] According to the body fluid absorptivity wear article concerning this invention, by the part of the core except a ridge, the diffused excrement is promptly absorbable in the whole region of the field of this part, diffusing excrement quickly throughout the front face of the field of the part located between ridges, since the diffusion rate of the excrement in the front face of a core is quick and the rate of absorption of excrement is quick. Even when a lot of excrement focuses on some articles and is excreted, excrement does not pile up in the elimination part of an article, and excrement overcomes a ridge and does not leak.

[0066] Since sequential absorption of the excrement which reached the ridge is carried out at a ridge, excrement does not leak from the edges-on-both-sides section of an article. In a ridge with a consistency lower than that of a part, since the excrement absorbed by the ridge is absorbed by the part from a ridge, even if a ridge is crushed with a wearer's body pressure, excrement does not exude from a ridge. In a ridge, since flexibility becomes high as compared with a part, a corner is beveled and it is not square, a feel when a ridge touches a wearer's skin is good.

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[Translation done.]

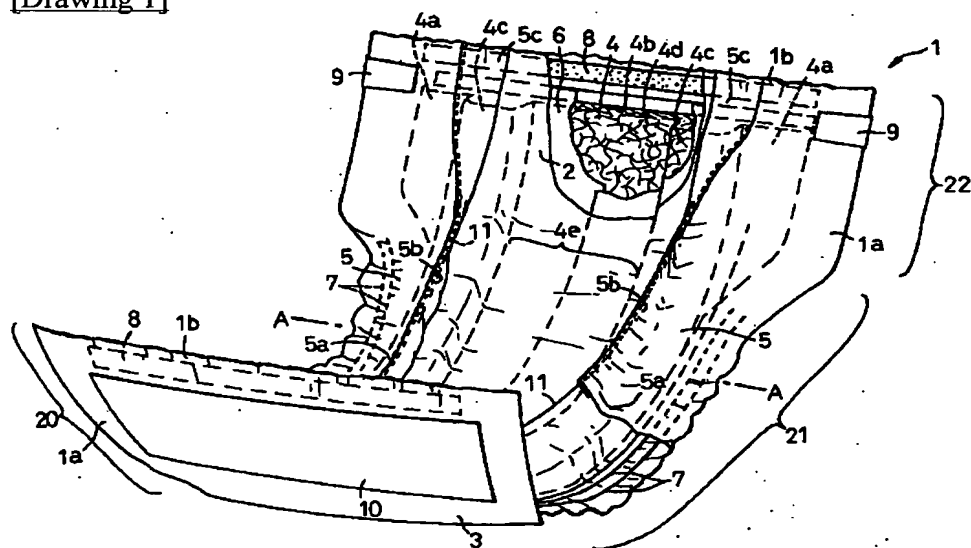
## \* NOTICES \*

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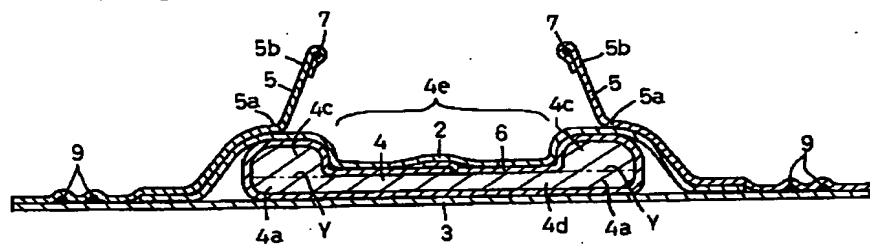
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## DRAWINGS

[Drawing 1]

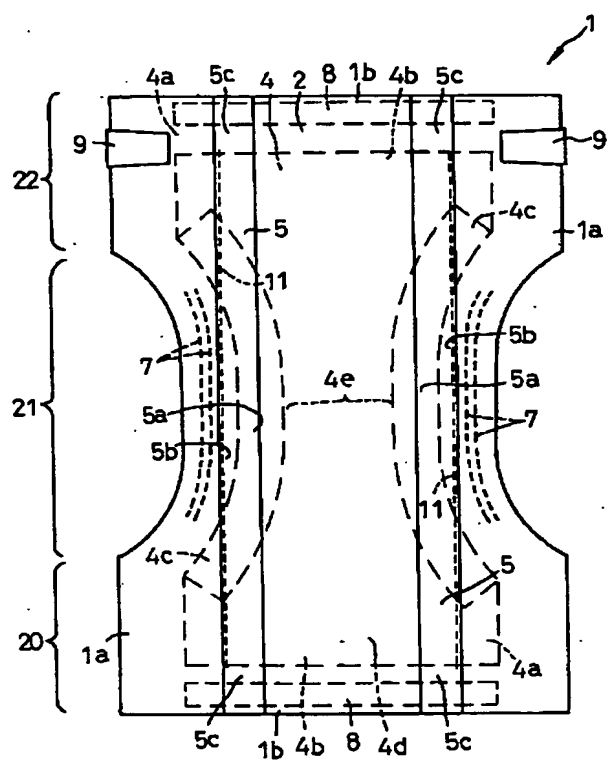


[Drawing 2]

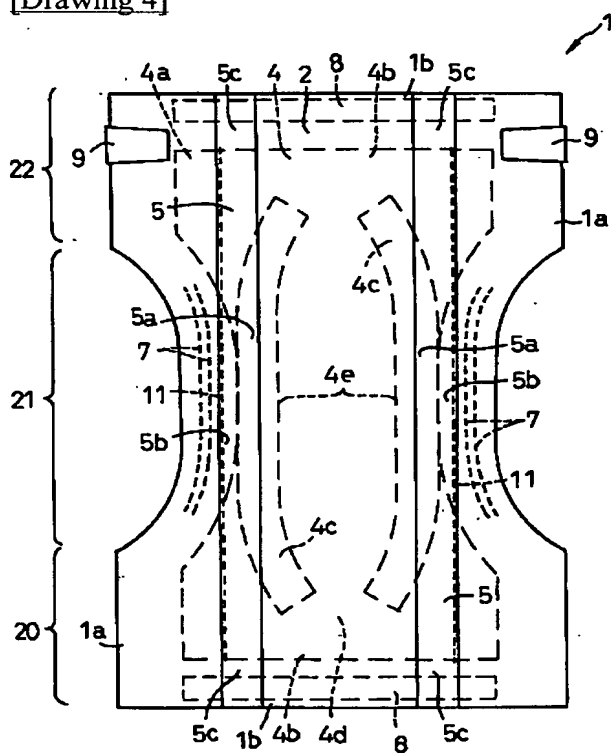


[Drawing 3]

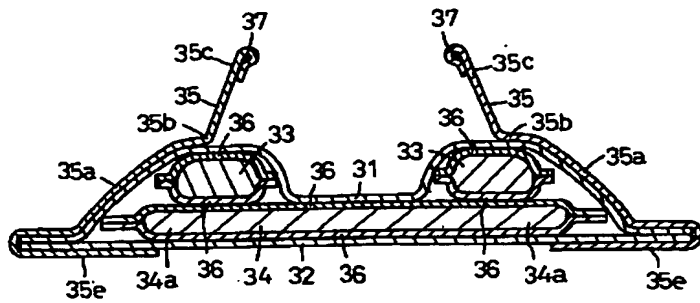




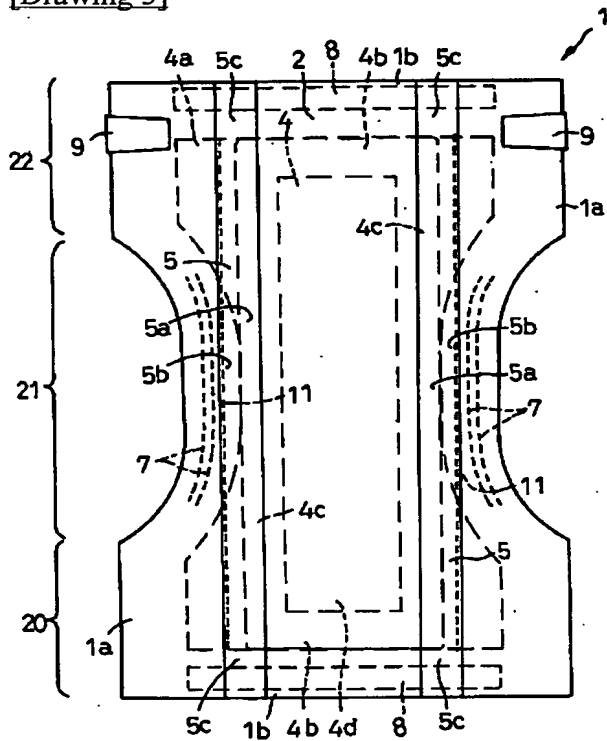
[Drawing 4]



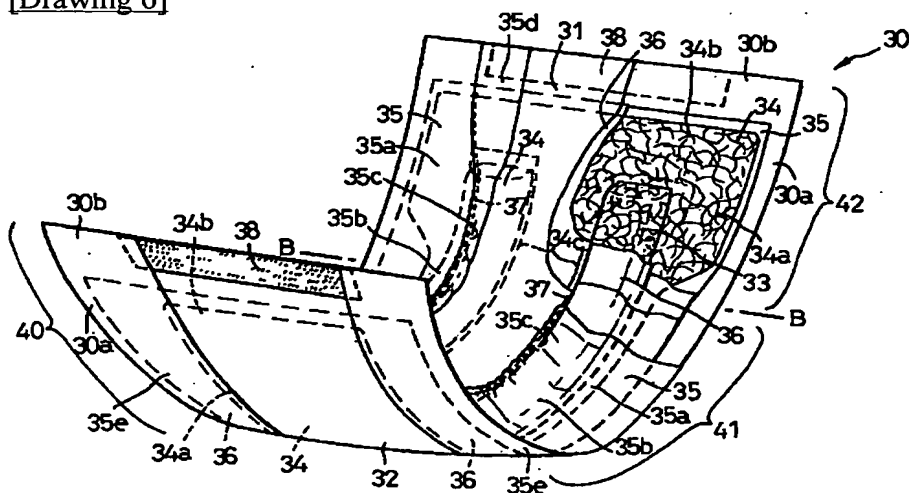
[Drawing 7]



[Drawing 5]



[Drawing 6]



[Translation done.]

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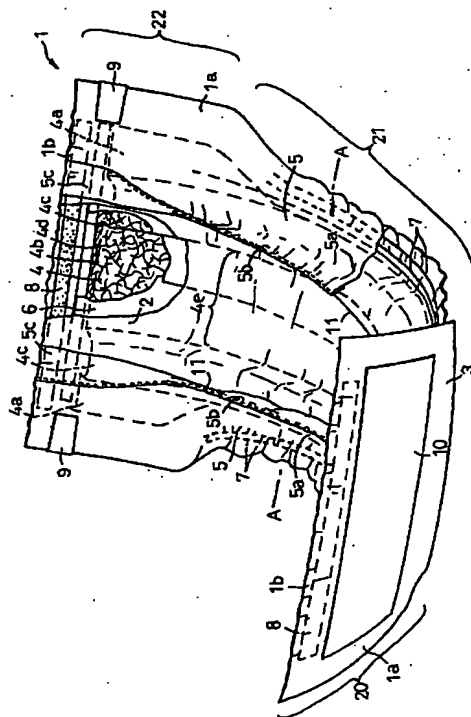
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(54) 【発明の名称】 体液吸収性着用物品

(57) 【要約】

【課題】 コアの隆起部に吸収された排泄物が隆起部の下方に位置するコアの部位に円滑に移行し、排泄物が隆起部から滲出することがない体液吸収性着用物品を提供する。

【解決手段】 表面シート2と、裏面シート3と、それらシート2, 3の間に介在するコア4とから構成され、縦方向へ延びる両側縁部1aと、横方向へ延びる両端縁部1bとを有し、コア4に形成された隆起部4cが両側縁部1aに沿って互いに並行離間して延び、隆起部4cの密度が隆起部4cを除くコア4の部位4dのそれよりも低密度にしてある。



**【特許請求の範囲】**

【請求項 1】 透液性表面シートと、不透液性裏面シートと、それらシートの間介在する吸液性コアとから構成され、互いに対向して縦方向へ延びる両側縁部と、互いに対向して横方向へ延びる両端縁部とを有し、前記表面シートの側へ隆起する隆起部が前記コアに形成され、前記隆起部が、前記両側縁部と前記両端縁部とのうちの少なくとも前記両側縁部に沿って互いに並行離間して延びている体液吸収性着用物品において、

前記隆起部の密度が、前記隆起部を除く前記コアの部位のそれよりも低密度であることを特徴とする前記物品。

【請求項 2】 前記コアが、粉碎パルプと高分子吸水性ポリマーとから形成され、前記隆起部における前記粉碎パルプの密度が、前記隆起部を除く前記コアの部位のそれよりも低密度である請求項 1 記載の物品。

【請求項 3】 前記コアが、熱可塑性合成樹脂で形成された短繊維を含み、前記隆起部における前記粉碎パルプと前記短繊維との密度が、前記隆起部を除く前記コアの部位のそれよりも低密度である請求項 2 記載の物品。

【請求項 4】 前記隆起部の密度が、 $0.02 \sim 0.10 \text{ g/cm}^3$  の範囲にあり、前記隆起部を除く前記コアの部位の密度が、 $0.05 \sim 0.20 \text{ g/cm}^3$  の範囲にある請求項 1 ないし請求項 3 いずれかに記載の物品。

【請求項 5】 前記隆起部が、前記コアとは別体の第 2 の吸液性コアで形成されている請求項 1 ないし請求項 4 いずれかに記載の物品。

【請求項 6】 前記物品が、表面シートの上面に位置して前記縦方向へ延びる一対の液抵抗性防漏シートを備え、前記防漏シートそれぞれが、前記隆起部の頂部に位置して前記物品に固着された固定側部と、前記縦方向へ弾性的な伸縮性を有して前記表面シートの外面から上方へ起立性向を有する自由側部と、前記物品の両端縁部に位置して前記物品に固着された固定端部とを有する請求項 1 ないし請求項 5 いずれかに記載の物品。

**【発明の詳細な説明】****【0001】**

【発明の属する技術分野】 本発明は、使い捨ておむつや失禁者用吸尿パッド、おむつライナー、パンティーライナー、生理用ナプキン等の排泄物を吸収、保持する体液吸収性着用物品に関する。

**【0002】**

【従来の技術】 実開平 6-21626 号公報は、透液性表面シートと不透液性裏面シートとの間に吸液性コアが介在し、コアの領域のうちの少なくとも股下域における表面シート上に、コアの上方へ隆起し、かつ、前後身頃の縦方向へ並行離間して延びる 2 条の吸収性補助部材が配置され、補助部材の圧縮復元率をコアのそれよりも高くしてある使い捨ておむつを開示している。おむつは、圧縮弾性率の高い補助部材を有するので、補助部材が着用者の肌に密着するとともに、補助部材が着用者の体圧

で変形しても容易に復元して排泄物を吸収またはせき止め、排泄物の横漏れを防ぐことができる。

**【0003】**

【発明が解決しようとする課題】 多量の尿が排泄された場合には、コアの尿吸収速度よりも排尿速度が速く、コアの上面に滞留した尿が逆戻りして漏れの原因となる。同号公報に開示のおむつでは、補助部材の間に位置するコアの表面全域に尿を素早く拡散させる手段がないので、排泄された多量の尿をコアや補助部材が吸収しきれないと、尿が排尿部位に位置するコアに滞留し、補助部材を乗り越えて漏れ出してしまうことがある。また、補助部材に吸収された尿が補助部材からコアへ円滑に移行しない場合には、補助部材が着用者の体圧で潰れたときに、補助部材に滞留する尿が補助部材から滲出してしまふことがある。

【0004】 本発明の課題は、軟便や尿、経血等の流動性の排泄物をせき止める隆起部を形成した吸液性コアにおいて、隆起部の内側に位置するコアの部位の表面全域に排泄物を素早く拡散させるとともに、該部位の全域から排泄物を吸収させることで、排泄物の漏れを防ぐことができる体液吸収性着用物品を提供することにある。

【0005】 本発明の他の課題は、隆起部に吸収された排泄物が隆起部から部位に円滑に移行し、排泄物が隆起部から滲出することがない体液吸収性着用物品を提供することにある。

**【0006】**

【課題を解決するための手段】 前述した課題を解決するための本発明は、透液性表面シートと、不透液性裏面シートと、それらシートの間介在する吸液性コアとから構成され、互いに対向して縦方向へ延びる両側縁部と、互いに対向して横方向へ延びる両端縁部とを有し、前記表面シートの側へ隆起する隆起部が前記コアに形成され、前記隆起部が、前記両側縁部と前記両端縁部とのうちの少なくとも前記両側縁部に沿って互いに並行離間して延びている体液吸収性着用物品を改良することにある。

【0007】 改良にかかる本発明の特徴は、前記隆起部の密度が、前記隆起部を除く前記吸収性部材の部位のそれよりも低密度であることにある。

【0008】 本発明の実施の態様の一例として、前記吸収性部材が、粉碎パルプと高分子吸水性ポリマーとから形成され、前記隆起部における前記粉碎パルプの密度が、前記隆起部を除く前記吸収性部材の部位のそれよりも低密度である。

【0009】 本発明の実施の態様の他の一例としては、前記吸収性部材が、熱可塑性合成樹脂で形成された短繊維を含み、前記隆起部における前記粉碎パルプと前記短繊維との密度が、前記隆起部を除く前記吸収性部材の部位のそれよりも低密度である。

【0010】 本発明の実施の態様の他の一例としては、



前記隆起部の密度が、 $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲にあり、前記隆起部を除く前記吸収性部材の部位の密度が、 $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にある。

【0011】本発明の実施の態様の他の一例としては、前記隆起部が、前記吸収性部材とは別体の第2の吸収性部材で形成されている。

【0012】本発明の実施の態様の他の一例としては、前記物品が、表面シートの上面に位置して前記縦方向へ延びる一対の液抵抗性防漏シートを備え、前記防漏シートそれぞれが、前記隆起部の頂部に位置して前記物品に固着された固定側部と、前記縦方向へ弾性的な伸縮性を有して前記表面シートの外面から上方へ起立性向を有する自由側部と、前記物品の両端縁部に位置して前記物品に固着された固定端部とを有する。

【0013】

【発明の実施の形態】添付の図面を参照して、本発明に係る体液吸収性着用品の詳細を使い捨ておむつと失禁者用吸尿パッドとを例として説明すると、以下のとおりである。

【0014】図1、2は、使い捨ておむつ1の部分破断斜視図と、図1のA-A線断面図とであり、図2では、コア4の隆起部4cと隆起部4cを除くコア4の部位4dとの境界を仮想線Yで示す。おむつ1は、透液性表面シート2と、不透液性裏面シート3と、表面シート2と裏面シート3との間に介在する吸液性コア4とから構成されている。

【0015】おむつ1は、縦方向に前胴周り域20と、後胴周り域22と、前後胴周り域20、22の間に位置する股下域21とを有し、互いに対向して縦方向へ延び、股下域21においておむつ1の横方向内方へ向かって弧を画く両側縁部1aと、互いに対向して横方向へ延びる両端縁部1bとを有する砂時計型のものである。おむつ1には、互いに対向離間して縦方向へ延びる一対の液抵抗性防漏シート5がおむつ1の両側縁部1aにおける表面シート2の側に取り付けられている。

【0016】コア4は、粉碎パルプと高分子吸収性ポリマーとの混合物であり、所要の厚みに圧縮され、表面全体が透水性シート6で被覆、接合されている。コア4には、図2に示す仮想線Yを境界としてコア4の上面から隆起し、角部が面取りされた隆起部4cが形成されている。隆起部4cは、コア4の両側縁部4aに位置し、互いに並行離間して縦方向へ略直状に延びている。コア4は、隆起部4cにおける粉碎パルプの密度が隆起部4cを除くコア4の部位4dのそれよりも低密度のものである。隆起部4cと部位4dとは、略均一の量のポリマーを含有している。

【0017】コア4は、隆起部4cにおける粉碎パルプの密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、部位4dにおける粉碎パルプの密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあり、好ましくは、隆起部4cにおける

粉碎パルプの密度が $0.05 \sim 0.06 \text{ g/cm}^3$ の範囲、部位4dにおける粉碎パルプの密度が $0.10 \sim 0.11 \text{ g/cm}^3$ の範囲である。

【0018】粉碎パルプの密度が上記範囲にあるコア4の部位4dでは、粉碎パルプの繊維間隙が密となって毛细管現象が強く表れる。ゆえに、部位4dでは、その厚み方向とともにコア4の表面における排泄物の拡散速度が速く、かつ、排泄物の吸収速度が速い。

【0019】コア4の部位4dでは、表面シート2と透水性シート6とを透過して部位4dに到達した排泄物を、隆起部4cの間に位置する部位4dの領域4eの表面全域に素早く拡散させつつ、該部位4dの領域4eの全域において、拡散した排泄物を速やかに吸収することができる。

【0020】排泄物が部位4dの領域4eに拡散する過程において、隆起部4cに到達した排泄物は、隆起部4cに順次吸収されるので、排泄物がおむつ1の両側縁部1aから漏れてしまうことがない。粉碎パルプの密度が部位4dのそれよりも低い隆起部4cでは、隆起部4cに吸収された排泄物が隆起部4cから部位4dに吸収されるので、隆起部4cが着用者の体圧で潰されたとしても、排泄物が隆起部4cから滲出することはない。

【0021】粉碎パルプの密度が上記範囲にあるコア4の隆起部4cでは、部位4dに比較して柔軟性が高くなり、角部が面取りされて角張っていないので、隆起部4cが着用者の肌に接したときの感触がよい。

【0022】隆起部4cにおける粉碎パルプの密度が $0.02 \text{ g/cm}^3$ 未満であると、排泄物が隆起部4cに吸収されたときに、排泄物に含まれる液体の表面張力によって粉碎パルプの繊維間隙が縮小し、隆起部4cの高さ寸法が低くなるので、排泄物が隆起部4cを乗り越えて漏れ出してしまうことがある。隆起部4cにおける粉碎パルプの密度が $0.10 \text{ g/cm}^3$ を超過すると、隆起部4cと部位4dとの密度差が小さくなり、隆起部4cに吸収された排泄物が隆起部4cから部位4dに円滑に移行しないので、隆起部4cが着用者の体圧で潰されたときに、隆起部4cに滞留する排泄物が隆起部4cから滲出することがある。

【0023】部位4dにおける粉碎パルプの密度が $0.05 \text{ g/cm}^3$ 未満であると、排泄物が部位4dの領域4eで拡散し難くなり、該部位4dの領域4eの全域において、排泄物を吸収することができない。部位4dにおける粉碎パルプの密度が $0.20 \text{ g/cm}^3$ を超過すると、部位4dにおけるコア4の剛性が増して、コア4が着用者の肌に接したときに違和感を与える。

【0024】コア4は、粉碎パルプと高分子吸収性ポリマーとの他に、熱可塑性合成樹脂で形成された短繊維を含むことができる。短繊維を含むコア4は、粉碎パルプと短繊維とポリマーとの混合物であり、所要の厚みに圧縮された状態で表面全体が透水性シート6で被覆、接合

される。コア4は、隆起部4cにおける粉碎パルプと短繊維との密度が隆起部4cを除く部位4dのそれらよりも低密度であり、隆起部4cにおける粉碎パルプと短繊維とを合わせた密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、部位4dにおける粉碎パルプと短繊維とを合わせた密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあることが好ましい。

【0025】短繊維を含むコア4の部位4dでは、粉碎パルプと短繊維との繊維間隙が密となって毛細管現象が強く表れる。ゆえに、部位4dでは、その厚み方向とともにコア4の表面における排泄物の拡散速度が速く、かつ、排泄物の吸収速度が速い。

【0026】粉碎パルプと短繊維との密度が部位4dのそれよりも低い隆起部4cでは、隆起部4cに吸収された排泄物が隆起部4cから部位4dに吸収される。

【0027】おむつ1の両側縁部1aには、2条の脚周り用弾性伸縮性部材7が裏面シート3と防漏シート5との間に介在し、裏面シート3と防漏シート5との少なくとも一方の内面に伸長状態で取り付けられている。おむつ1の両端縁部1bには、フィルム状の胴周り用弾性伸縮性部材8が表面シート2と裏面シート3との間に介在し、表面シート2と裏面シート3との少なくとも一方の内面に伸長状態で取り付けられている。

【0028】おむつ1の後胴周り域22における両側縁部1aには、横方向内方へ延びるテープファスナ9が取り付けられている。おむつ1の前胴周り域20における裏面シート3の外面には、テープファスナ9の止着域となる矩形のターゲットテープ10が取り付けられている。

【0029】防漏シート5は、コア4の隆起部4cの頂部において表面シート2の外面に固着された固定側部5aと、固定側部5aに並行しておむつ1の両端縁部1bの間に延びる自由側部5bと、おむつ1の両端縁部1bにおいて横方向外方へ折曲され、固定側部5aから横方向外方へ延びる防漏シート5の部分に固着された固定端部5cとを有する。自由側部5bには、縦方向へ延びる弾性伸縮性部材11が自由側部5bに被覆された状態で伸長下に取り付けられている。

【0030】おむつ1は、防漏シート5の固定側部5aがコア4の隆起部4cの頂部に位置しているので、コア4に隆起部4cがないものと比較して、固定側部5aと自由側部5bとの間の幅寸法が短いものでも、隆起部4cと相俟って防漏シート5の自由側部5bが高い障壁を形成し、排泄物の横漏れを防ぐことができる。

【0031】図1では、おむつ1がその内面を内側にし、縦方向へ湾曲し、防漏シート5の自由側部5bに取り付けられた弾性部材11が収縮して自由側部5bが表面シート2から上方へ起立している。おむつ1では、弾性部材7、8、11それぞれが収縮しておむつ1の両側縁部1aおよび両端縁部1bと防漏シート5の自由側部5

bとにギャザーが形成されている。

【0032】おむつ1の両側縁部1aでは、コア4の両側縁部4aから横方向外方へ表裏面シート2、3と防漏シート5とが延び、それらシート2、3、5が互いに重なり合う部分において、表面シート2の内面と裏面シート3の内面とが固着され、表面シート2の外面と防漏シート5の内面とが固着されている。裏面シート3と防漏シート5とは、表面シート2の側縁からさらに横方向外方へ延びる部分において、それらシート3、5の内面どうしが固着されている。

【0033】おむつ1の両端縁部1bでは、コア4の両端縁部4bから縦方向外方へ表面シート2と裏面シート3とが延び、それらシート2、3が互いに重なり合う部分において、表面シート2の内面と裏面シート3の内面とが固着されている。透水性シート6は、表面シート2と裏面シート3との少なくとも一方の内面に固着されている。

【0034】図3～図5は、図1における各種実施態様を表面シート2の側から示すおむつ1の平面図である。図3～図5のおむつ1は、表面シート2と、裏面シート3と、それらシート2、3の間に介在するコア4とから構成され、縦方向に前後胴周り域20、22と、股下域21と、股下域21においておむつ1の横方向内方へ向かって弧を画く両側縁部1aと、両端縁部1bとを有し、おむつ1の両側縁部1aにおける表面シート2の側に一對の防漏シート5が取り付けられている点において図1のそれと同一である。

【0035】図3では、離間並行して延びるコア4の隆起部4cが股下域21においておむつ1の横方向内方へ向かって弧を画き、隆起部4cの間隔が股下域21で狭く、前後胴周り域20、22で股下域21よりも広がっている。図3のおむつ1は、おむつ1を着用したときに、隆起部4cが着用者の股間に納り、股下域21におけるコア4の嵩張りを小さくすることができる。

【0036】図4では、離間並行して延びるコア4の隆起部4cが股下域21においておむつ1の横方向外方へ向かって弧を画き、隆起部4cの間隔が股下域21で広く、前後胴周り域20、22で股下域21よりも狭くなっている。図4のおむつ1は、股下域21での隆起部4cの間隔を広くすることで、股下域21における隆起部4cの間の領域4eに排泄物を素早く拡散、吸収させ、股下域21からの排泄物の漏れを防ぐことができる。

【0037】図5では、コア4の隆起部4cがコア4の周縁部に位置して環状に延びている。図5のおむつ1は、隆起部4cが環状に延びているので、隆起部4cがおむつ1の両側縁部1aの他に、両端縁部1bにおいても障壁となり、おむつ1の両側縁部1aと両端縁部1bとからの排泄物の漏れを防ぐことができる。

【0038】図6、7は、失禁者用吸尿パッド30の部分破断平面図と、図6のB-B線断面図とである。パッ

ド30は、透液性表面シート31と、不透液性裏面シート32と、表面シート31と裏面シート32との間に介在する吸液性コア33、34とから構成されている。パッド30は、パッド30を保持するためのおむつカバーや失禁パンツ等のアウターシートの内面に取り付けて使用するものである。

【0039】パッド30は、縦方向に前胴周り域40と、後胴周り域42と、前後胴周り域40、42の間に位置する股下域41とを有し、互いに対向して縦方向へ延びる両側縁部30aと、互いに対向して横方向へ延びる両端縁部30bとを有する。パッド30の両側縁部30aには、互いに対向離間して縦方向へ延びる一対の液抵抗性防漏シート35が取り付けられている。

【0040】コア33、34は、下層コア34と下層コア34の両側縁部34aに沿って縦方向へ略直状に延びる上層コア33とから形成されている。上層コア33は、角部が面取りされたもので、下層コア34の両端縁部34bの近傍まで延びている。上層コア33は、下層コア34に対する隆起部を形成する。上層コア33と下層コア34とは、粉碎パルプと高分子吸収性ポリマーとの混合物であり、所要の厚みに圧縮され、コア33、34各々の表面全体が透水性シート36で被覆、接合されている。

【0041】下層コア34は、前胴周り域40と股下域41とが略同一の面積を有し、後胴周り域42における面積が前胴周り域40と股下域41とのそれよりも大きいものである。上下層コア33、34は、上層コア33における粉碎パルプの密度が下層コア34のそれよりも低密度であり、上層コア33と下層コア34とは、略均一の量のポリマーを含有している。

【0042】パッド30では、上層コア33における粉碎パルプの密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、下層コア34における粉碎パルプの密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあり、好ましくは、上層コア33における粉碎パルプの密度が $0.05 \sim 0.06 \text{ g/cm}^3$ の範囲、下層コア34における粉碎パルプの密度が $0.10 \sim 0.11 \text{ g/cm}^3$ の範囲である。

【0043】粉碎パルプの密度が上記範囲にある下層コア34では、その厚み方向とともに下層コア34の表面における排泄物の拡散速度が速く、かつ、排泄物の吸収速度が速いので、表面シート31と透水性シート35とを透過して下層コア34に到達した排泄物を、上層コア33の間に位置する下層コア34の領域34cの表面全域に素早く拡散させつつ、該領域34cの全域において、拡散した排泄物を速やかに吸収することができる。

【0044】排泄物が下層コア34の領域34cに拡散する過程において、上層コア33に到達した排泄物は、上層コア33に順次吸収されるので、排泄物がパッド30の両側縁部30aから漏れてしまうことがない。粉碎パルプの密度が下層コア34のそれよりも低い上層コア

33では、上層コア33に吸収された排泄物が上層コア33から下層コア34に吸収されるので、上層コア33が着用者の体圧で潰されたとしても、排泄物が上層コア33から滲出することはない。

【0045】粉碎パルプの密度が上記範囲にある上層コア33では、下層コア34と比較して柔軟性が高く、上層コア33が着用者の肌に接したときの感触がよい。上層コア33と下層コア34との密度を上記値とする理由は図1に示すおむつ1と同様である。

【0046】パッド30では、上下層コア33、34が粉碎パルプと熱可塑性合成樹脂で形成された短繊維と高分子吸収性ポリマーとの混合物であってもよい。短繊維を含む上下層コア33、34は、上層コア33における粉碎パルプと短繊維との密度が下層コア34のそれよりも低密度であり、上層コア33における粉碎パルプと短繊維とを合わせた密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、下層コア34における粉碎パルプと短繊維とを合わせた密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあることが好ましい。

【0047】防漏シート35は、パッド30の両側縁部30aで横方向内方へ向かって折曲され、パッド30の両側縁部30から表面シート31の外面の側へ延びる第1部分35aと、パッド30の両側縁部30aから裏面シート32の外面の側へ延びる第2部分35eとを有する。

【0048】防漏シート35の第1部分35aは、上層コア33の頂部において表面シート31の外面に固着された固定側部35bと、固定側部35bに並行してパッド30の両端縁部30bの間に延びる自由側部35cと、パッド30の両端縁部30bにおいて横方向外方へ折曲され、固定側部35bから横方向外方へ延びる防漏シート35の部分に固着された固定端部35dとを有する。自由側部35cには、縦方向へ延びる弾性伸縮性部材37が自由側部35cに被覆された状態で伸長下に取り付けられている。第2部分35eは、パッド30の両側縁部30aと両端縁部30bとにおいて裏面シート32の外面に固着されている。

【0049】パッド30は、防漏シート35の固定側部35bが上層コア33の頂部に位置しているので、上層コア33と相俟って防漏シート35の自由側部35bが高い障壁を形成し、排泄物の横漏れを防ぐことができる。

【0050】パッド30の両端縁部30bにおける裏面シート32の外面には、アウター部材の内面に掛着可能な2つの雄型メカニカルファスナ38が取り付けられている。

【0051】図4では、パッド30がその内面を内側にして縦方向へ湾曲し、防漏シート35の自由側部35bに取り付けられた弾性部材37が収縮して自由側部35bが表面シート31の外面から上方へ起立している。パ

ッド30では、弾性部材37が収縮して防漏シート35の自由側部35bにギャザーが形成されている。

【0052】パッド30の両側縁部30aでは、下層コア34の両側縁部33aから横方向外方へ表面シート31と裏面シート32とが延び、それらシート31、32が互いに重なり合う部分において、それらシート31、32の内面どうしが固着されている。

【0053】パッド30の両端縁部30bでは、下層コア34の両端縁部33bから縦方向外方へ表面シート31と裏面シート32とが延び、それらシート31、32が互いに重なり合う部分において、それらシート31、32の内面どうしが固着されている。上層コア33を被覆する透水性シート36は、表面シート31の内面に固着され、下層コア34を被覆する透水性シート36は、裏面シート32の内面に固着されている。

【0054】図1に示すおむつ1のコア4では、隆起部4cと部位4bとがそれぞれ異なる量のポリマーを含有していてもよく、図6に示すパッド30のコア33、34では、上層コア33と下層コア34とがそれぞれ異なる量のポリマーを含有していてもよい。

【0055】異なる量のポリマーを含有する場合において、図1のコア4は、隆起部4cの密度が部位4dのそれよりも低密度であり、隆起部4cにおける粉碎パルプとポリマーとを合わせた密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、部位4dにおける粉碎パルプとポリマーとを合わせた密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあることが好ましい。コア4が短繊維を含む場合は、隆起部4cにおける粉碎パルプとポリマーと短繊維とを合わせた密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、部位4dにおける粉碎パルプとポリマーと短繊維とを合わせた密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあることが好ましい。

【0056】異なる量のポリマーを含有する場合において、図6のコア33、34は、上層コア33の密度が下層コア34のそれよりも低密度であり、上層コア33における粉碎パルプとポリマーとを合わせた密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、下層コア34における粉碎パルプとポリマーとを合わせた密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあることが好ましい。上下層コア33、34が短繊維を含む場合は、上層コア33における粉碎パルプとポリマーと短繊維とを合わせた密度が $0.02 \sim 0.10 \text{ g/cm}^3$ の範囲、下層コア34における粉碎パルプとポリマーと短繊維とを合わせた密度が $0.05 \sim 0.20 \text{ g/cm}^3$ の範囲にあることが好ましい。

【0057】また、図1と図6とのコア4、33、34が異なる量のポリマーを含有する場合は、ポリマーの密度に勾配を設けることができる。図1のコア4では、隆起部4cの上部から部位4dの下部へ向かってポリマーの密度が次第に高くなるようにすることが好ましく、図

6のコア33、34では、上層コア33の上部から下層コア34の下部へ向かってポリマーの密度が次第に高くなるようにすることが好ましい。なお、コア4の部位4dと下層コア34とが、粉碎パルプとポリマーとの混合物の他に、粉碎パルプの間にポリマーを介在させた積層体であってもよい。

【0058】図1のコア4は、隆起部4cと部位4dとが一体となったもので、コア4を製造するときに、隆起部4cと部位4dとを異なる密度にする工程が必要であるが、図6のコア33、34は、別体の上層コア33と下層コア34とから形成されているので、上記工程を必要とせずにそれぞれ密度が異なる上層コア33と下層コア34とを製造することができ、図1のコア4と比較して製造コストの面で有利である。

【0059】図1と図6とのコア4、33、34では、隆起部4cと上層コア33との高さ寸法が $3 \sim 15 \text{ mm}$ の範囲にあることが好ましく、より好ましくは、 $7 \sim 8 \text{ mm}$ の範囲である。また、部位4dと下層コア34との高さ寸法が $1 \sim 10 \text{ mm}$ の範囲にあることが好ましく、より好ましくは、 $3 \sim 4 \text{ mm}$ の範囲である。

【0060】高分子吸収性ポリマーとしては、自重の20倍以上の液体を吸収、保持可能であってゲル化する性質を有する粒子状のものが好ましく、デンプン-アクリル酸（塩）グラフト重合体、デンプン-アクリロニトリル共重合体のケン化物、ナトリウムカルボキシメチルセルロースの架橋物、アクリル酸（塩）重合体等を使用することができる。

【0061】表面シート2、31には、不織布や開孔プラスチックフィルム等の透液性のシート、好ましくは透液性であって親水性のシートを使用することができる。裏面シート3、32と防漏シート5、35とには、疎水性不織布、不透液性のプラスチックフィルムまたは疎水性不織布とプラスチックフィルムとのラミネートシート、好ましくは通気不透液性のシートを使用することができる。コア4、33、34を被覆する透水性シート6、36には、ティッシュペーパーや坪量が $5 \sim 10 \text{ g/m}^2$ の範囲にある透液性の不織布を使用することができる。

【0062】不織布としては、スパンレース、ニードルパンチ、メルトブローン、サーマルボンド、スパンボンド、ケミカルボンド等の不織布を使用することができる。不織布の構成繊維およびコアに含まれる短繊維としては、ポリオレフィン系、ポリエステル系、ポリアミド系、の各繊維、ポリエチレン/ポリプロピレンまたはポリエステル/ポリプロピレン等の複合繊維等を使用することができる。

【0063】シート2、3、5、6、31、32、35、36やおむつ1およびパッド30の構成部材9、10、38の固着、弾性部材7、8、11、37の取り付けには、ホットメルト接着剤等の接着剤や粘着剤の他に、熱溶着の技術を利用することができる。

【0064】この発明は、使い捨ておむつ1や失禁者用吸尿パッド30の他に、おむつライナーやパンティーライナー、生理用ナプキン等にも実施することができる。

【0065】

【発明の効果】本発明に係る体液吸収性着用物品によれば、隆起部を除くコアの部位では、コアの表面における排泄物の拡散速度が速く、かつ、排泄物の吸収速度が速いので、隆起部の間に位置する部位の領域の表面全域に排泄物を素早く拡散せつつ、該部位の領域の全域において、拡散した排泄物を速やかに吸収することができる。多量の排泄物が物品の一部分に集中して排泄された場合でも、排泄物が物品の排泄部位に滞留することなく、排泄物が隆起部を乗り越えて漏れてしまうことがない。

【0066】隆起部に到達した排泄物は、隆起部に順次吸収されるので、排泄物が物品の両側縁部から漏れてしまうことがない。密度が部位のそれよりも低い隆起部では、隆起部に吸収された排泄物が隆起部から部位に吸収されるので、隆起部が着用者の体圧で潰されたとしても、排泄物が隆起部から滲出することはない。隆起部では、部位に比較して柔軟性が高くなり、角部が面取りされて角張っていないので、隆起部が着用者の肌に接したときの感触がよい。

【図面の簡単な説明】

【図1】使い捨ておむつの部分破断斜視図。

【図2】図1のA-A線断面図。

【図3】実施態様の一例を示すおむつの平面図。

【図4】実施態様の一例を示すおむつの平面図。

【図5】実施態様の一例を示すおむつの平面図。

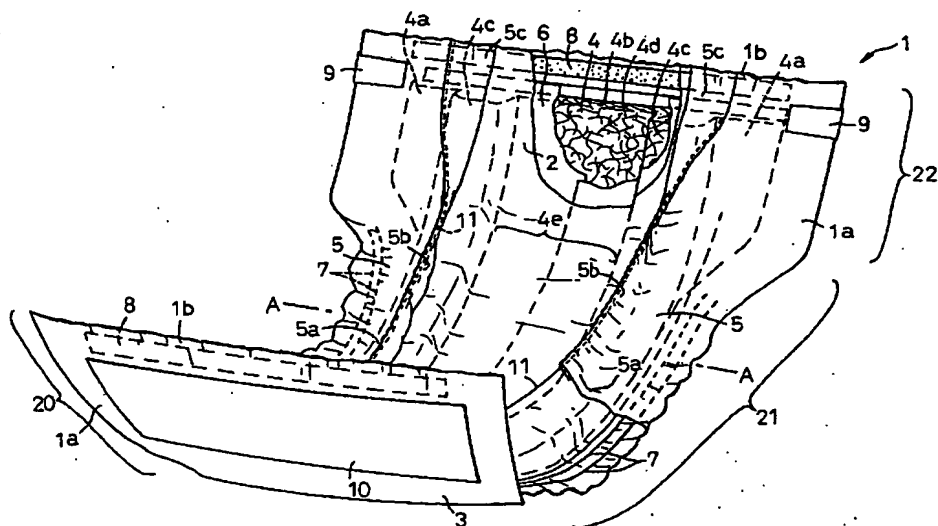
【図6】失禁者用吸尿パッドの部分破断斜視図。

【図7】図6のB-B線断面図。

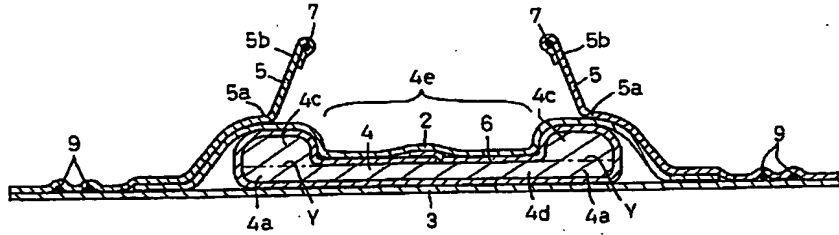
【符号の説明】

1	使い捨ておむつ（体液吸収性着用物品）
1 a	両側縁部
1 b	両端縁部
2	透液性表面シート
3	不透液性裏面シート
4	吸収性コア
4 c	隆起部
4 d	部位
5	液抵抗性防漏シート
5 a	固定側部
5 b	自由側部
5 c	固定端部
30	失禁者用吸尿パッド（体液吸収性着用物品）
30 a	両側縁部
30 b	両端縁部
31	透液性表面シート
32	不透液性裏面シート
33	下層コア
34	上層コア
35	液抵抗性防漏シート
35 b	固定側部
35 c	自由側部
35 d	固定端部

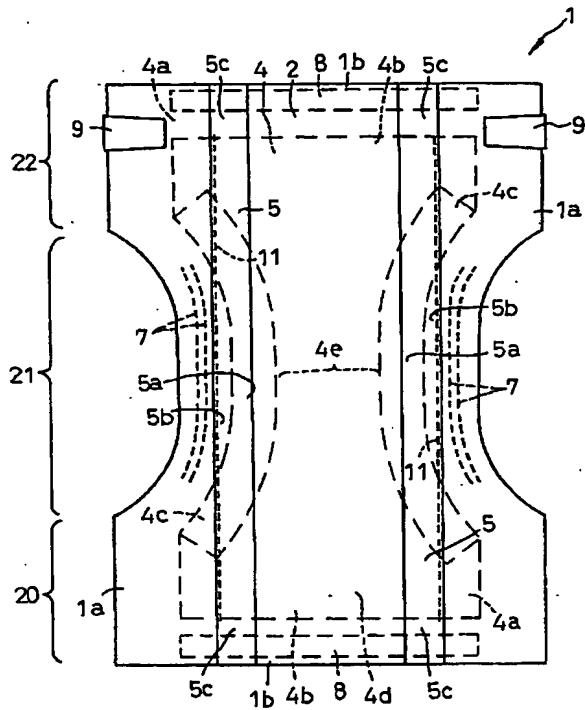
【図1】



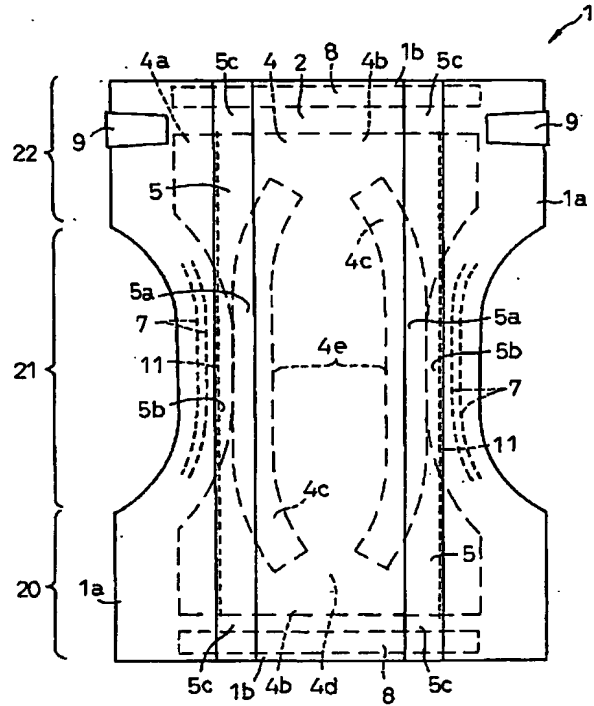
【図2】



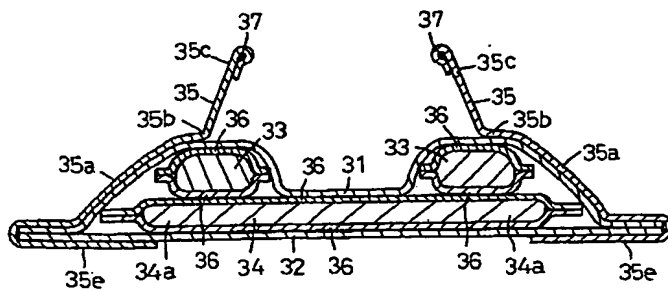
【図3】



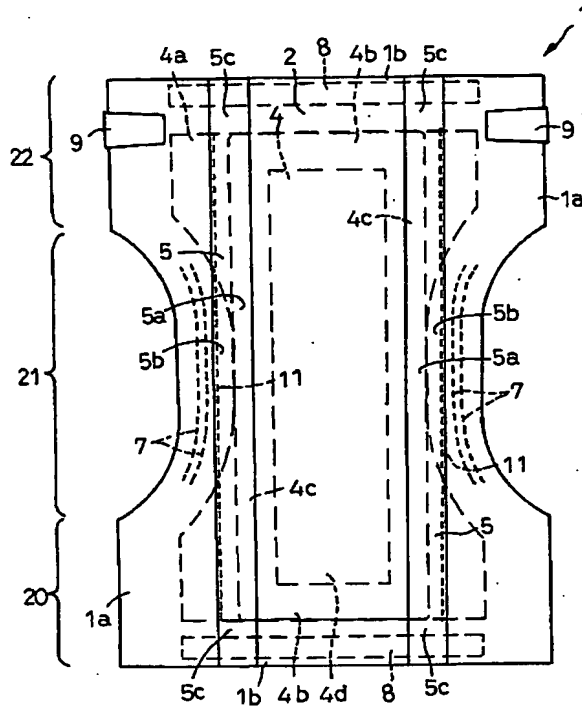
【図4】



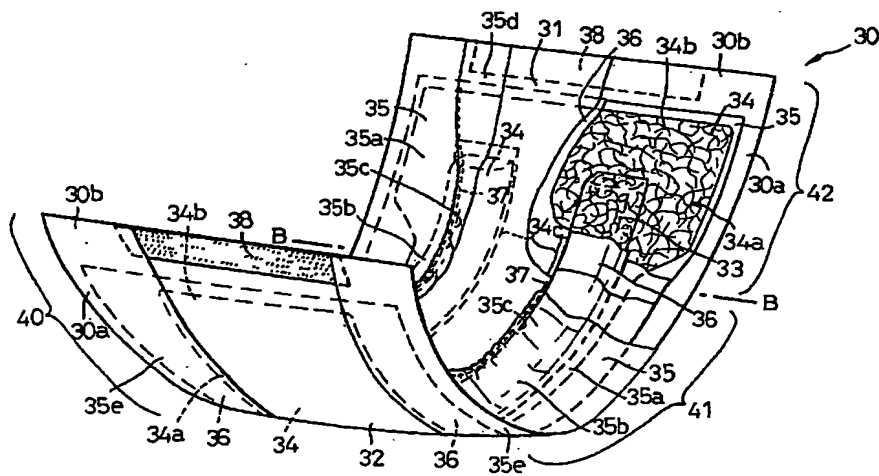
【図7】



【図5】



【図6】



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